What is claimed is:

1. A laser diode comprising:

a first clad layer of a first conductivity type formed on a substrate;

an active layer formed at an upper layer of said first clad layer;

a second clad layer of a second conductivity type formed at an upper layer of said active layer;

a third clad layer of the second conductivity type formed at an upper layer of said second clad layer in a current injection stripe region;

a contact layer formed at an upper layer of said third clad layer; and

an electrode formed so as to connect said second clad layer in regions other than said current injection stripe region and to connect said contact layer;

whereby when a first current is injected from said electrode via said contact layer by applying a predetermined voltage to said electrode and laser light is emitted from a laser light oscillation region near said active layer, a second current which is smaller than said first current is injected in regions other than said current injection stripe region from said electrode via said second clad layer and currents at ends of said laser

light oscillation region are controlled for self pulsation.

2. A laser diode as set forth in claim 1, wherein saturatable absorption regions are formed at said ends of the laser light oscillation region for self pulsation.

3. A laser diode as set forth in claim 1, wherein said second clad layer comprises a AlGaInP-based material.

4. A laser diode as set forth in claim 1, wherein a material of said electrode at a portion contacting said second clad layer comprises titanium.

5. A laser diode as set forth in claim 4, wherein said electrode comprises stacked layers of titanium, platinum, and gold and formed so as to contact said second clad layer and contact layer from the titanium side.

6. A laser diode as set forth in claim 1, comprising an etching stop layer between said second clad layer and said third clad layer.

7. A laser diode as set forth in claim 1, wherein a degree of self pulsation can be adjusted by a thickness of said third clad layer and a width of said current injection stripe region.

8. A laser diode as set forth in claim 1, wherein a thickness of said third clad layer is in a range of 0.1

to 0.7 µm.

9. A laser diode as set forth in claim 1, wherein a width of said current injection stripe region is in a range of 1.5 to 5 µm.

10. A semiconductor light emitting device comprising a plurality of laser diode elements, wherein at least one of said laser diode elements comprises:

a first clad layer of a first conductivity type formed on a substrate;

an active layer formed at an upper layer of said first clad layer;

a second clad layer of a second conductivity type formed at an upper layer of said active layer;

a third clad layer of the second conductivity type formed at an upper layer of said second clad layer in a current injection stripe region;

a contact layer formed at an upper layer of said third clad layer; and

an electrode formed so as to connect said second clad layer in regions other than said current injection stripe region and to connect said contact layer; and

whereby said at least one of said laser diode elements is a laser diode wherein, when a first current is injected from said electrode via said contact layer by

applying a predetermined voltage to said electrode and a laser light is emitted from a laser light oscillation region near said active layer, a second current which is smaller than said first current is injected in regions other than said current injection stripe region from said electrode via said second clad layer and currents at ends of said laser light oscillation region are controlled for self pulsation.

11. A semiconductor light emitting device as set forth in claim 10, wherein said plurality of laser diode elements are formed on said same substrate.

12. A method of producing a laser diode, including the steps of:

forming a first clad layer of a first conductivity type on a substrate;

forming an active layer at an upper layer of said first clad layer;

forming a second clad layer of a second conductivity type at an upper layer of said active layer;

forming a third clad layer of the second conductivity type at an upper layer of said second clad layer;

forming a contact layer at an upper layer of said third clad layer;

forming a mask layer for protecting a current

injection stripe region;

removing said third clad layer and said contact layer while leaving the current injection stripe region by using said mask layer as a mask; and

forming an electrode so as to connect to said second clad layer in regions other than said current injection stripe region and to connect said contact layer.

13. A method of producing a laser diode as set forth in claim 12, further including the step of forming an etching stop layer at an upper layer of said second clad layer between the step of forming said second clad layer and the step of forming said third clad layer; wherein:

said third clad layer is formed at an upper layer of said etching stop layer in the step of forming said third clad layer; and

said third clad layer and said contact layer are removed by using said etching stop layer as an etching stop and furthermore etching conditions are changed for removing said etching stop layer in the step of removing said third clad layer and said contact layer.

14. A method of producing a laser diode as set forth in claim 12, wherein titanium is used as a material of said electrode of a portion contacting said second

clad layer in the step of forming said electrode.

15. A method of producing a laser diode as set forth in claim 14, wherein stacked layers of titanium, platinum, and gold are formed as the above electrode so as to contact said second clad layer and contact layer from its titanium side in the step of forming said electrode.

16. A method of producing a laser diode as set forth in claim 12, wherein a thickness of said third clad layer is formed to be in a range of 0.1 to 0.7 μm.

17. A method of producing a laser diode as set forth in claim 12, wherein a width of said current injection stripe region is formed to be in a range of 1.5 to 5 μm.